

ATTACHMENT 3. EPA RESPONSE TO COMMENTS

McCOY FIELD, HATHAWAY BOULEVARD NEW BEDFORD, MASSACHUSETTS

I EPA's Revisions to the Draft Approval

In addition to minor editorial changes, the following revisions have been made to the *draft* risk-based PCB cleanup and disposal approval (*draft* approval):

1. The Risk-Based PCB Cleanup and Disposal Approval (Approval) under 40 CFR §761.61(c) requires submittal of a long term monitoring and maintenance implementation plan (MMIP) for the Site. The *draft* approval required that the MMIP include the surfaces caps, groundwater and indoor air. In the final Approval, EPA is requiring that vent gases and wetland sediments be included in the MMIP.
2. A requirement for development of a worker training component and a communications component in the MMIP has been added in the Approval conditions. The communications component shall detail how the maintenance and monitoring results will be communicated to the Site users, including teachers, parents, students, other on-site workers, and interested stakeholders. The worker training component shall apply to workers performing routine site activities such as landscapers, focusing on preventing accidental releases of contaminated soil as a result of improper disturbance of physical controls (e.g. caps). The worker training plan must include a requirement for ongoing training and written certification of such training.
3. A requirement for assessment of potential PCB contamination at the existing Keith Middle School and the nearby athletic fields has been incorporated in the Approval. If PCBs are found, the City shall submit a cleanup plan for EPA review and approval. In the alternative, the City shall submit documentation that cleanup of the properties is not required under TSCA and the federal PCB regulations at 40 CFR Part 761.

II Responsive Summary to Comments Received

The following summarizes EPA's response to written comments received on the *draft* approval. One set of written comments was received during the formal comment period on the *draft* approval from June 14 to July 15, 2005, which focused specifically on the technical aspects of the cleanup plan and the risk assessment methodology. Two written comments were received requesting an extension of the comment period. In order to provide additional public review time, the comment period was extended an additional two week period (until July 29, 2005). One set of written technical comments was received during this period.

In the following, EPA has organized the comments by subject matter and has provided a summary of relevant comments with our responses.

1. Adequacy of the Regulatory Process and Scope of Approval

COMMENT 1

The public review and comment period should be extended because the repository was incomplete and the public did not have full access to all the information.

EPA Response:

Since March 2005, McCoy Field documents submitted to EPA by the City have been placed in the McCoy Field repository at the New Bedford Free Public Library. EPA became aware that some of documents had been separated, and several citizens indicated during the Public Involvement Plan (PIP) meetings, and during the June 22, 2005 EPA Public Informational Meeting, that the PCB cleanup plan was unclear and incomplete.

EPA has always believed that the complete documents relevant to the PCB cleanup at the McCoy Field Site should be readily available for public review. Accordingly, in addition to the paper repository, EPA posted all relevant documents on its website on June 29, 2005 and notified all PIP members via US mail. EPA also extended the public review and comment period an additional two weeks until July 29, 2005 to allow the public a full 30 day review and comment period. In addition, the New Bedford Free Public Library implemented a formal process for tracking of all McCoy Field documents to ensure that the site file was complete at all times.

EPA has determined that an adequate public notice and comment process was provided, even though not required by the TSCA statute.

COMMENT 2

EPA departments identified deficiencies in the City's cleanup request, including lack of justification on transport, risk calculations and capping details.

EPA Response:

The commenter is correct that EPA staff, who reviewed the initial March 2005 PCB Risk-Based Cleanup Plan submitted by the City, identified deficiencies in the plan. All comments identified by the EPA reviewers were subsequently corrected and/or addressed in additional submittals and/or in the City's responses to EPA comments. These documents are part of the Administrative Record, are in the paper repository, and are on EPA's website.

COMMENT 3

The Notice of Activity and Use Limitation provided in the Risk-Based Cleanup Plan pertains to the entire property, including the wetlands. The wetlands are not addressed in the Risk-Based Cleanup Plan and should be.

EPA Response:

The Notice of Activity and Use Limitation (AUL) provided in the Risk-Based Application is draft only and has not been finalized. An executed AUL will be required upon completion of activities at the McCoy Field Site, including the wetlands. EPA has received the City's proposed risk-based cleanup plan to address PCB contaminated wetland sediments. This proposal includes excavation and off-site disposal of PCB-contaminated sediments with greater than 1 part per million PCBs, which is supported by an ecological risk assessment. While this plan is still under review, an AUL would not be required on the wetlands either under the federal PCB regulations or under the Massachusetts MCP, because the proposed cleanup will meet the standards. The wetlands remediation will be addressed through a separate TSCA approval as specified in the TSCA Approval for McCoy Field.

COMMENT 4

Submitted narratives are inconsistent with drawing and plans for depth of fill.

EPA Response:

The inconsistencies between the narrative and drawings/plans were addressed in the document *Alan Hanscom (BETA) to Kimberly Tisa (EPA) letter responding to EPA Supplemental Comments on Risk-Based Application, May 18, 2005 and attached Risk-Based Cleanup Request, Rev. 2, May 18, 2005.*

2. What Are the Appropriate Regulatory Standards

COMMENT 1

Incorrect cleanup standards are being applied to the Site and the S-1 cleanup standard of < 2 ppm should apply to this Site.

EPA Response:

The Risk-Based Cleanup Request for McCoy Field was submitted in accordance with the Toxic Substances Control Act (TSCA) and the federal PCB Regulations at 40 CFR §761.61(c). The comment refers to the requirements under the Massachusetts

Contingency Plan (MCP). Under the MCP, soils are categorized as S-1, S-2, or S-3 soils based on the human exposure potential. The McCoy Field Site surface soils (0-3 feet) are classified as S-1 category soils, since the S-1 category soils are associated with the highest potential for exposure. Under the MCP, the PCB cleanup standard for a S-1 category soil is 2 ppm. However, the MCP provides for an alternative to meeting prescribed cleanup standards if exposure is eliminated through establishment of an Activity and Use Limitation. The City's proposed cleanup for the Site will include the establishment of an AUL which is consistent with the allowances under the MCP. As a result, the S-1 category will apply to only the clean imported soil (fill) for the caps. The potential for any exposure to the deeper impacted soils (Category S-2 and S-3) will be eliminated by the clean soil cap, and/or pavement and AUL.

COMMENT 2

The 50 ppm limit for non-liquid PCB levels is not applicable and the 2 ppm limit for liquid PCB concentrations should be applied to this site.

EPA Response:

The commenter states that the 2 ppm limit for liquid PCB concentrations should apply to this site. The commenter provides no reference for this limit. EPA assumes that the 2 ppm limit refers to EPA's PCB decontamination standard for organic liquids and non-aqueous inorganic liquids at 40 CFR §761.79(b). This specific section is not applicable to the Site. As stated in the following applicability excerpt: "This section (i.e., §761.79) establishes decontamination standards and procedures for removing PCBs, which are regulated for disposal, from water, organic liquids, non-porous surfaces (including scrap metal from disassembled electrical equipment), concrete, and non-porous surfaces covered with a porous surface, such as paint or coating on metal..." Therefore, the 2 ppm decontamination standard cited is not applicable for cleanup of PCB-contaminated soils. The cleanup for McCoy Field is being addressed under the Risk-Based Cleanup and Disposal Option for PCB Remediation Waste at 40 CFR 761.61(c). Under this option, there are no specified cleanup standards. Rather, the cleanup is based on a risk assessment.

COMMENT 3

The proposed PCB remediation plan is inconsistent with the requirements under the MCP, and the capping plan fails to address S-1 standards for containment of contaminated soils.

EPA Response:

Given the contaminants identified at the McCoy Field Site, cleanup is regulated under both the federal PCB Regulations at 40 CFR Part 761 and the Massachusetts Contingency Plan. EPA has worked closely with the Massachusetts Department of Environmental

Protection (MADEP) on review of the cleanup proposed at the Site. The MCP and the regulations established therein provide for the establishment of Activity and Use Limitations (AULs) in lieu of meeting prescribed cleanup standards. As stated previously, the S-1 category soils will apply to only the clean imported soil (fill) for the caps. An AUL would prevent direct exposure to site contaminants, which is consistent with the proposal for McCoy Field. As such, EPA believes that the proposed cleanup is consistent with the MCP regulations.

COMMENT 4

Under TSCA, the EPA has in the past closed university buildings where PCB soil concentrations were greater than 10 ppm.

EPA Response:

The commenter states that under TSCA, EPA has closed university buildings in Massachusetts where soil concentrations exceeded 10 ppm PCBs. The commenter provides no reference material. EPA is unaware of any applicable precedents involving university buildings. Cleanup and disposal of PCBs at the McCoy Field Site are being conducted under the Risk-Based Cleanup and Disposal Option at 40 CFR §761.61(c). There are no prescribed cleanup standards under this option. Rather, cleanup requirements are determined based on Site contaminants and concentrations, exposure and resulting risk assessment.

COMMENT 5

Brownfield standards should not be applied to hazardous waste sites containing PCBs as per federal law. Brownfields standards are inadequate to protect the public health and safety of New Bedford neighborhoods from contamination at McCoy Field.

EPA Response:

The Brownfields regulations contain no prescribed PCB cleanup standards. PCBs are regulated for cleanup and disposal under the federal TSCA PCB regulations. Superfund is also mandated to address PCB contamination, but applies the requirements of the TSCA PCB Regulations in developing a cleanup plan for a PCB-contaminated Site.

COMMENT 6

S-1 standards for PCBs require active venting and EPA standards for school construction near PCB sites indicate active venting.

EPA Response:

The S-1 soil category standards relate to requirements under the MCP. Based on discussions with the MA Department of Environmental Protection, there is no such requirement (active venting) under the S-1 standard. The commenter refers to, but provides no citation for, an EPA standard for active venting for school construction. EPA has determined that the proposed passive venting system is adequate to protect public health based on the site-specific contaminants.

COMMENT 7

Safe enough is not good enough. Unless soil levels through the Site to all depths are removed to levels less than 1ppm, there is no environmental documentation or public health standards support for the City's plan.

EPA Response:

EPA's regulations under the Risk-Based Cleanup and Disposal Option allow cleanup and reuse of a contaminated site if a finding can be made that the contamination remaining at the site presents no unreasonable risk to human health or the environment. There are no prescribed cleanup standards since the risk to site users is determined based on a risk assessment, which considers things such as the physical and chemical properties of the site-specific contaminants, exposure frequency, exposure routes, and exposure intakes. Based on this assessment, the excess cancer risk estimated for students exposed to volatilized PCBs in indoor air was 7×10^{-10} , which is well below EPA's 1×10^{-6} acceptable cancer risk level. (This acceptable risk is the de minimis standard for insignificant risk most often used in federal environmental statutes, regulations, and policies.) This estimated risk was conservatively determined without consideration of the vapor barrier or venting. Thus, EPA has made a finding that contamination at the Site will present no unreasonable risk to human health if the caps, passive ventilation, and solid vapor barriers are installed.

3. Adequacy of Site Characterization

COMMENT 1

According to the City of New Bedford, the PCB contamination has not been fully delineated.

EPA Response:

EPA has determined that the PCB contamination at the McCoy Field Site has been adequately characterized.

The comment specifically refers to statements made by the City of New Bedford during Public Involvement Plan (PIP) meetings and activities conducted by the City. According to the City of New Bedford, the comment was taken out of context. Discussions at the subject PIP Meetings were related to further delineation of the nature and extent of contamination off the McCoy Field Site. All contamination at McCoy Field has been defined in accordance with MCP requirements and the EPA-approved Work Plan. Plans are underway for supplemental delineation of the off-site contamination, consistent with MCP and TSCA regulations.

COMMENT 2

PCB contamination on the entire site, including the wetlands should be addressed.

EPA Response:

The City of New Bedford has submitted a PCB cleanup plan for the wetlands adjacent to McCoy Field. The proposed plan and related documents are available on EPA's website at www.epa.gov/ne/mccoyfield. These documents are currently under review by EPA and EPA has made no final determination on the adequacy of the City's proposed plan. Any decisions related to the wetlands cleanup plan will be documented in a separate TSCA approval and posted on EPA's website.

COMMENT 3

The McCoy Field draft approval cannot be complete without remediation of areas adjacent to the Site, namely the wetlands and New Bedford High School.

EPA Response:

The City has submitted a wetlands remediation plan to EPA. This plan is currently under review. The Approval requires the City to submit a characterization and cleanup plan for New Bedford High School as well as for the other properties, including nearby privately-owned properties and athletic fields, and the existing Keith Middle School, unless the City can submit documentation to EPA confirming that the PCBs are not regulated under TSCA and the federal PCB regulations. Even if the PCB contamination at the High School is not regulated under TSCA, the assessment and cleanup is required by the MADEP under the MCP.

4. Adequacy of Risk Assessment

COMMENT 1

The use of averaging or eliminating high concentrations of PCBs (46,500 ppm) to determine the overall PCB concentration was inappropriate for this site and for protecting public health and safety.

EPA Response:

The City's risk evaluation followed acceptable EPA methodologies and guidelines. The 46,500 ppm PCB sample was not included in the risk analysis estimating exposure to PCBs that are volatilized from soil because that soil was excavated and removed from the Site, as was all soil in the excavated areas with PCBs concentrations of ≥ 100 ppm. Soils samples were not composited or averaged. The maximum PCB concentration from soil remaining at the site, 94.5 ppm, was used for calculating the volatilized PCB concentration in indoor air (see May 26, 2005, memorandum from BETA Group, Inc. to Ms. Kimberly Tisa, EPA). The use of the maximum concentration of 94.5 ppm is conservative, as the estimated average PCB concentration for the remaining soils is 10.5 ppm and the 97.5 percent upper confidence limit on the mean (based on the statistical evaluation that EPA guidance typically recommends using) is 13.4 ppm. Also, the risk analysis did not include or consider the protection provided by the vapor barrier or venting. Thus, it was concluded that the PCBs soil concentrations would not present a risk to human health at the McCoy Field site.

COMMENT 2

Numerous studies show exposure to PCBs cause elevated PCB blood levels and these studies advocate lowering the PCB cleanup level to < 1 ppm.

EPA Response:

The commenter provided no citations, specific results, nor validation of the studies. EPA assumes that the studies referenced by the commenter, are based on direct exposure to PCBs. The remedy proposed for McCoy Field includes isolation of PCB-contaminated soil using clean soil and pavement, and placement of passive ventilation and a solid vapor barrier beneath the building footprint. With these controls properly put in place, and properly maintained and monitored, there should be no potential for PCB exposure to persons at the Site.

Under the PCB Regulations at 40 CFR Part 761, EPA has established a PCB cleanup standard of < 1 ppm for soils without any physical controls or site use restrictions. As previously discussed, this is not the case with McCoy Field. The City is conducting

cleanup of PCBs under the Risk-Based Cleanup and Disposal Option which allows PCBs at > 1 ppm to remain in place if there is no unreasonable risk to public health.

COMMENT 3

PCB concentrations at up to 46,000 ppm have been found at the Site. A PCB concentration of 0.5 ppm versus 46,000 ppm represents a risk factor of 1 out of 100,000, which is greater than EPA's accepted risk factor of one in 10 million.

EPA Response:

The commenter has incorrectly identified ratios of PCB concentrations as risk factors. The 1 in 100,000 risk factor apparently is calculated by dividing 0.5 ppm by 46,000 ppm, then this value is compared to the EPA risk factor of 1 in 10 million or 1×10^{-7} . Risk factors are not determined by direct comparison to PCB concentrations. Rather, the risk factors are developed from the accepted hazards of PCBs as determined by the scientific community combined with an exposure assessment, which considers among other things, the PCB concentrations at the site, the exposure frequency, the amount of contamination intake, and the route of exposure (e.g. dermal, ingestion, inhalation). The risk assessment conducted and submitted by the City of New Bedford followed federally accepted guidelines and methodologies. As a point of clarification, EPA's acceptable risk level is 1 in 1 million or 1×10^{-6} . This acceptable risk is the de minimis standard for insignificant risk most often used in federal environmental statutes, regulations, and policies.

COMMENT 4

The PCB cleanup standard for the Site should be 0.5 ppm rather than 2 ppm since the daily dose is based on an adult's weight rather than a child's weight and since a 10% daily exposure rate is assumed.

EPA Response:

The commenter uses the terms daily dose and exposure limit interchangeably, and incorrectly, with PCB concentration. In the comment, the 2 ppm PCB soil limit is being equated, incorrectly, to a daily dose and a daily exposure rate. Thus, per the commenter, for 24 hours (i.e., 1 day), the daily limit is 2 ppm and 25% of this, 6 hours, would be equal to the 0.5 ppm concentration referenced in the comment. However, these values are incorrect for this risk assessment. The daily dose and daily exposure rate are factors that were considered as part of the overall human health risk assessment, submitted by the City and reviewed by EPA. Neither the MCP nor EPA's risk assessment guidance identifies the referenced 10% daily exposure rate, and therefore EPA does not consider the reference valid.

As a point of clarification, in the human health risk assessment conducted for the Site, an adult weight rather than child weight was used in the assessment since the adult and child inhalation rate to body weight ratios were similar. In order to confirm that this comparison was reasonable, EPA also calculated the exposure using a child weight rather than adult weight. The exposure calculation was based on conservative assumptions such as using the maximum PCB soil concentration of 94.5 ppm to determine the PCB indoor air concentration, and assuming that the students would be exposed for 8 hours a day for 250 days per year. Also, the risk assessment did not include or consider the protection provided by the vapor barrier or venting. The cancer risk estimated for students exposed to volatilized PCBs in indoor air was 7×10^{-10} (see May 19, 2005, memorandum from Diane Sinkowski, Versar, to Laura Casey, EPA), well below the 1×10^{-6} acceptable cancer risk level. Thus, it was concluded that the PCBs soil concentrations would not present a risk to human health at the McCoy Field site.

COMMENT 5

PCBs have been found in surface soils (6 out of 150 samples) at the New Bedford High School where 4 feet of clean fill was placed. A risk factor of 6/150 or 4% is too high for school children.

EPA Response:

With respect to the “risk factor” of 6/150 or 4%, the commenter uses this term incorrectly. The correct terminology would be “frequency of detection”, not “risk factor”. As previously stated, risk factors are determined based on exposure assessments, which would include but not be limited to, the concentration of site contaminants, the frequency of a person’s exposure to PCBs, and how the person is exposed. The Approval requires the City to characterize PCB contamination at the High School and to submit a cleanup plan to EPA, if required under TSCA.

5. Adequacy of Remediation and Engineering Controls

COMMENT 1

The remedial design does not address stormwater runoff and erosion potential from the Site to the adjacent wetlands.

EPA Response:

A Storm Water Pollution Prevention Plan (SWPPP) dated September 2004 was submitted to EPA and the contractor is required to follow the procedures identified in the SWPPP during the project. EPA is unaware of any current erosion from the site into the wetlands. A July 13, 2005 Field Inspection Report by the City of New Bedford Conservation Commission did not identify any erosion issues and found that the erosion control measures were in place and functional, thus providing protection to the wetlands from contamination on McCoy Field.

COMMENT 2

The cleanup plan does not address horizontal transport factors, pollution movement into the wetlands, and exposure in landscaped areas.

EPA Response:

Based on the comment, EPA assumes that the commenter is specifically referencing the potential for migration into the wetlands from the McCoy Field Site. The City submitted a plan to address PCB contamination to the wetlands adjacent to McCoy Field in June 2005. EPA is currently reviewing the proposed plan and has made no determination on its adequacy. However, based on the data provided, the PCB contamination appears to be in surficial (less than one foot deep) sediments/soils located at the toe of the McCoy Field embankments. The data indicate that PCBs from the fill material located at the Site and in the embankments migrated to these low lying areas via wind erosion and storm water runoff. This is further supported by the groundwater sampling and native material sampling conducted at McCoy Field in which no PCB contamination was found. The capping plan for McCoy Field requires at least 2-feet of clean materials at the site surface. These capping materials must be maintained in accordance with the Activity and Use Limitation for the Site. Accordingly, surface runoff will not be a migration pathway for PCB-contaminated soils. Similarly, the capping materials will preclude the potential for entrainment of contaminated soil particulates to be released into the air and redeposited into the wetlands.

While it is not very likely that the wetlands will be impacted in the future from PCB contamination at McCoy Field, as an extra measure of precaution, EPA will require ongoing groundwater monitoring and wetland sediment monitoring. Should this monitoring indicate that there are new impacts resulting in unreasonable risk to the wetlands from McCoy Field, EPA will require the City to implement measures to mitigate the migration per the conditions of the Approval.

COMMENT 3

PCBs left in place continue to contribute to environmental contamination and public health dangers. There will be vertical and horizontal movement of PCBs due to groundwater and stormwater influences, soil settling, and subsurface drainage influences.

EPA Response:

EPA agrees that uncontrolled PCB contaminated sites have the potential for contributing to environmental contamination. However, given the chemical and physical properties of PCBs, the measures that will be employed at the McCoy Field site, including surface caps and activity and use limitations, will reduce to acceptable levels or eliminate the potential for release of PCB contamination from the Site.

EPA's analysis shows that the primary PCB of concern at the McCoy Field site is Aroclor 1254, a highly chlorinated PCB. In general, more highly chlorinated PCBs will have a lower tendency to leach and therefore are more likely to remain adsorbed to soil. These facts are supported by the high octanol to water coefficient (average K_{ow} is 1×10^6) and low water solubility (0.012 mg/L) consistent with accepted scientific literature, as well as the results of the soil/gas vapor and groundwater testing at the Site.

With respect to groundwater and stormwater infiltration, the majority of stormwater from the site will be collected through the on-site stormwater collection system. Stormwater from roof runoff will be collected through roof drains and discharged to the wetlands. While there will be areas of the site where water can freely infiltrate site soils (e.g. the landscaped areas), it is highly unlikely that this will be sufficient to completely saturate the clean fill at the site and create a water/air pathway for PCB evaporation. To date, PCB contamination has not been found in the native materials located beneath the PCB-contaminated material nor have PCBs been detected in the groundwater.

COMMENT 4

PCB-contaminated soils can migrate upwards as is evidenced by the PCBs which have been found in surface soils at New Bedford High School.

EPA Response:

The commenter provides no technical justification or reference to support that PCB-contaminated soils are upwardly mobile but refers to PCB concentrations found at New Bedford High School.

The New Bedford High School was constructed in the early 1970's and EPA is unaware of any controls or requirements which were put in place regarding landscaping, excavating, or maintenance. Based on information provided by BETA Group, the LSP of record for the High School, during the numerous soil borings conducted on the High

School property, the contaminated burn debris was not covered with 4 feet of clean material in any locations.

COMMENT 5

The proposed capping plan is one that is common for commercial structures with low-level contaminants. PCBs are not considered low-level by many state public health boards until under a 2 mg/l threshold and the capping plan uses a 50 mg/l limit instead. The capping plan, which is used for commercial development, should not be used for a public school.

EPA Response:

To address this comment, EPA assumes that the commenter has confused the concentration unit cited in the comment and meant to refer to threshold limits of 2 mg/Kg and 50 mg/Kg. The mg/Kg unit (which is equivalent to ppm) would be the correct unit for PCB concentrations in soil.

The commenter states that the capping plan uses the 50 mg/Kg limit rather than the 2 mg/Kg limit. With respect to the 2 mg/Kg, the PCB regulations under TSCA have no such soil standard, even though the MCP does reference this standard for its Category S-1 soils.

However, the commenter is incorrect in stating that the capping plan uses the 50 mg/Kg standard. The cleanup plan references the 50 mg/Kg PCB limit under the federal TSCA PCB regulations as one of the criteria which establish the applicability of TSCA for cleanup and disposal of PCB-contaminated soils at a Site. However, if the source of the PCB contamination was greater than or equal to 50 mg/Kg, and if the contamination occurred after 1979, materials that are contaminated at less than 50 mg/Kg are also regulated for cleanup and disposal. Given that PCBs at 50 mg/Kg or greater are present at the Site, and the fact that PCB-contaminated materials were spread across the Site in the 1990's, cleanup and disposal of the PCB-contaminated soils at McCoy Field are regulated under TSCA.

The PCB regulations provide 2 options for cleanup and disposal. The City of New Bedford opted to address the PCB contamination at the site under the Risk-Based Cleanup and Disposal option at 40 CFR 761.61(c). The 50 mg/Kg standard is not specified under the risk-based cleanup and disposal option. Rather, this option requires that the site owner (the City) provide justification to support its proposed plan by showing that there will be no unreasonable risk to site users. The City provided a human health risk assessment to support its proposed plan.

COMMENT 6

Geotextile provides no barrier to the upward movement of an average [PCB] molecule of 6 microns.

EPA Response:

The commenter states that the geotextile will not impede the movement of an average [PCB] molecule of 6 microns. While no reference was provided to support the 6 micron reference, the commenter is correct that the proposed geotextile is not a barrier to PCBs. Rather the geotextile serves to separate the contaminated soil from the clean soil. The use of the geotextile is reasonable given that PCBs adsorb to soil and therefore the issue is not with the size of the PCB molecule, but rather with the size of the soil particulates to which the PCBs are adsorbed. The fabric itself will restrict any significant upward migration of soil, and the overlying backfill material is largely granular (stone) and not subject to the capillary action that occurs in finer grained soil. Further, the weight of the clean soil above the contaminated soil further reduces the very unlikely upward migration of PCB-contaminated soil particulates.

COMMENT 7

Frost-heaving will facilitate upward migration of PCBs. The geotextile layer is prone to tears and stretching and will create more passage of contaminated soils toward the surface.

EPA Response:

As previously stated, the geotextile was not meant to act as a PCB barrier, but will serve to separate the contaminated soil from the clean soil. The geotextile is permeable allowing for the free passage of water. If the geotextile were impermeable, pockets of water could collect and intermittently freeze during the winter months, which would increase the potential for breakage to and/or stress on the geotextile and potentially compromise its effectiveness. Therefore, the overall cap design is less prone to breakage and frost due to the permeability and the relatively deep ground water table. Given that the geotextile will be placed across and atop a relatively even and homogeneous material, EPA does not anticipate any significant stress on the fabric, which will limit the potential for tearing or puncturing to the fabric.

COMMENT 8

The warning barrier and the geotextile separation material are not hazardous waste mitigation materials and therefore provide no additional protection to public health or safety.

EPA Response:

As previously discussed, the geotextile separation material was not intended to be a PCB barrier nor a hazardous waste mitigation system, but to physically separate the clean fill material from the PCB-contaminated materials. Likewise, the warning barrier was put in place as an additional visual aid for maintenance workers as a preventative measure to avoid breakage of the geotextile liner during landscaping or other maintenance activities. In the landscaped areas, clean material is beneath the warning barrier that overlays the geotextile. Therefore, in the event the warning barrier is breached, the material directly beneath is clean material.

COMMENT 9

The sample of the warning barrier presented at the informational meeting was fragile and it tore.

EPA Response:

EPA discussed this comment with the City and its consultant, BETA Group, who indicated that there was no breakage of the warning barrier at any time during the meeting. In fact, the warning barrier material is a plastic material, is not fragile, and is not readily prone to tearing.

COMMENT 10

No hazardous waste liners are proposed. The “sealed” geotextile liner cannot withstand temperature changes, frost action, penetration, or pollutant transport. The coated fabric is standard woven geotextile with a 10 micron thin coating of plastic to seal the material. The geotextile has a short life expectancy and cannot withstand a standard puncture test.

EPA Response:

The commenter appears to be referring to the coated separation fabric (Mirafi MCP-1212) which is being used temporarily to reduce the potential exposure to workers at the Site during construction activities. The cap design for the building footprint does not depend on the coated separation fabric. The actual cap in the building footprint consists of a geotextile barrier fabric installed over the contaminated material, then six to eight inches of clean granular material, then an adherence geotextile fabric, a gas vapor barrier, and the building foundation. This cap will be completed with a passive venting system.

COMMENT 11

PCB contaminated soils with concentrations up to 46,000 ppm were found at the Site. Three feet of fill does not stop a super concentration of PCBs.

EPA Response:

Sample # NSP-4 contained 46,500 ppm PCB, which was the highest concentration of PCBs found at the Site. This sample was collected from a stockpile located at the north end of the Site, which was approximately 1-foot high. Based on EPA's review of the analytical data, soils located in this stockpile and in piles in close proximity to this pile were not comparable in PCB concentration with soils collected from the remainder of the Site. The soils associated with these higher PCB concentrations were removed from the Site as were all soils in the excavation areas with PCBs at ≥ 100 ppm.

COMMENT 12

The pavement is inadequate and should not be counted as part of the clean fill layer.

EPA Response:

The final 1.5" asphalt coat will not be included as part of the 2-foot clean cover. This has been incorporated into the Approval language.

COMMENT 13

The pavement is not impermeable and will not last 40 to 50 years.

EPA Response:

With respect to the longevity of the pavement itself, EPA agrees that asphalt pavement will crack and will require periodic maintenance. Accordingly, the Long-Term Cap Monitoring and Maintenance Plan will require inspections and maintenance of all pavement and sidewalks to preserve the integrity of each barrier. EPA will require that inspections and any required corrective action be documented.

COMMENT 14

There is no historic justification to cap hazardous waste materials with asphalt pavement in the hazardous waste industry.

EPA Response:

In general, EPA agrees with the commenter's statement that asphalt is not used for capping hazardous waste [landfills]. However, hazardous waste landfills generally contain a variety of different types of contaminants at high concentrations. Capping of hazardous waste landfills requires a system which can address a large array of contaminants having different chemical properties. At McCoy Field, the contaminants of concern include PCBs, semi-volatile organics, and metals. These compounds do not readily leach, migrate, or volatilize. Thus, the capping measures proposed for McCoy Field are appropriate for these types of compounds.

COMMENT 15

The pavement will facilitate the upward migration of PCB-contaminated soils due to the affinity of PCBs to oil-based materials.

EPA Response:

With respect to the potential for the asphalt to facilitate upward transport of PCBs, the pavement will be underlain with a minimum of 2-feet of clean material. As there will be no direct contact of the asphalt with PCB-contaminated soil, EPA can find no evidence to support the claim that the pavement will in any way facilitate the transport of PCB-contaminated soils to the surface.

COMMENT 16

Proposed reduction of clean fill in parking areas from 24" to 15" is depending on paving to seal contaminants and is inadequate. Stones should not be considered part of the clean materials deterrent since the void space and porosity will aid moisture penetration which will result in increased "volubility" and vapor release potentials.

EPA Response:

As previously indicated, the Approval requires that the 1.5" final pavement coat not be counted toward meeting the 2-foot clean cover requirement. The granular material (stone) beneath the pavement is functional and will help support the integrity of the pavement. Additionally, granular materials (e.g. stones) help reduce capillary action.

COMMENT 17

Past events demonstrate that the City of New Bedford will not be able to carry out the requirements under the long-term monitoring and maintenance plan. PCB-contaminated

stockpiled soils have been left uncovered and uncontrolled, uncovered and contaminated trucks have left the site, and the site has been left unsecured. The City has demonstrated its unreliability in following acceptable hazardous material handling practices and mitigation.

EPA Response:

The long-term monitoring and maintenance activities include reporting requirements. EPA has the regulatory authority to oversee the City's compliance with the Approval, is committed to do so, and will take appropriate enforcement action against the City where necessary to protect public health and the environment. In addition, the Massachusetts Department of Environmental Protection has its own enforcement capabilities to ensure that the City carries out its responsibilities.

With respect to the purported events alluded to by the commenter, these were identified and discussed at several PIP meetings. The following explanation has been provided by the City of New Bedford:

The only time stockpiled PCB-contaminated soils were left uncovered was when the piles were being accessed by trained workers. During this time, dust monitoring was conducted in accordance with applicable sections of the EPA approved Work Plan and the SOP included as Work Plan Attachment U. Appropriate dust suppression measures were implemented as necessary to keep the dust level below the risk-based threshold action level.

All trucks transporting PCB-contaminated soils were properly covered and washed down prior to leaving the Site.

All contaminated soil removed from the Site was disposed of at an appropriately licensed disposal facility in accordance with the EPA-approved Work Plan.

The sources of all materials used as clean backfill were inspected and/or tested prior to transporting the materials to the Site.

COMMENT 18

Presence of other compounds such as barium and arsenic require a cover and capping plan akin to a hazardous waste landfill.

EPA Response:

The concentrations of barium and arsenic found at the site were similar to concentrations one would expect to find in urban fill, not in a hazardous waste landfill. However, given the chemical properties of these contaminants, specifically the low volatility and solubility, the capping that is proposed for the site, and the long-term monitoring/maintenance that is required under the Approval, will protect future site users from these site contaminants.

COMMENT 19

The capping plan does not address the lead contamination at the school.

EPA Response:

All site contaminants in the soil, including lead, have been addressed. Lead has similar chemical properties to barium and arsenic. As such, the capping that is proposed for the site, and the long-term monitoring/maintenance that is required under the Approval, will protect future site users from lead as well.

COMMENT 20

No documentation as to “cleanliness” of fill proposed was proposed.

EPA Response:

The specifications for the clean fill were provided in the City’s cleanup request. These specifications require that all fill material brought to the site be tested to ensure that it meets regulatory definitions of “clean”. In the PCB Regulations, EPA defines “clean” material to contain less than 1 ppm PCBs. Therefore, any fill materials brought to the Site must contain less than 1 ppm PCBs.

COMMENT 21

Only utility corridors have had complete removal of contaminated fill. Other areas, including travel paths, wetlands, play yards, etc. warrant complete removal of contaminants.

EPA Response:

For clarification, no play yards are proposed in the plan nor do any of the drawings or diagrams show such reuse activities. Further, the Activity and Use Limitation which will be placed on the site, will exclude this type of use. With respect to other areas on the site,

the exposure assessment concludes that there will be no unreasonable risk to site users following implementation of the caps, and provided there is long-term monitoring and maintenance of said caps. The Approval requires that the City submit monitoring and maintenance plans for caps, groundwater, sediment, vent gases, and the adjacent wetlands sediment to ensure the long-term integrity of these controls.

COMMENT 22

The venting system is passive and is not positioned to prevent gas venting from re-entering the building through HVAC intakes, windows, or roof access points. An active venting system should be standard for a site with elevated levels of pollutants.

EPA Response:

Given the chemical and physical properties of PCBs, EPA does not believe active venting is necessary. As discussed during the PIP meetings, PCBs have very low volatility and have not been detected in the soil/gas testing. Thus PCBs are not expected to be detected in any appreciable concentration in the venting system. Given this, it is very unlikely that PCBs beneath the school footprint would be detected in the indoor air even if the vapor barrier and venting system were not installed. However, the City proposed the installation of the vapor system as a conservative measure.

As a further safeguard, per *Alan Hanscom (BETA) to Kimberly Tisa (EPA) letter responding to EPA Supplemental Comments on Risk-Based Application, May 18, 2005*, the subslab vents will be located at least 20 feet away from the nearest HVAC unit, making entrance through the HVAC units as well as other access points most unlikely. However, should EPA find that the venting system is insufficient and/or creating indoor air concerns, EPA will require the City to conduct additional measures to correct the problem, such as adding carbon to the outlet of the vent stacks or requiring that the passive venting system be modified to an active venting system.

COMMENT 23

The plan indicates that PCBs are of low “volubility.” However, EPA representatives have indicated that PCBs in the harbor are “voluble” under the right conditions and no information is provided on Keith to determine if the school site meets those conditions.

EPA Response:

EPA assumes that the commenter is referring to solubility and volatility. It is generally agreed in the scientific community that PCBs adsorb strongly to soil. Per the site characterization data, the primary PCB of concern at the McCoy Field Site is Aroclor 1254. In general, the more highly chlorinated PCBs, such as Aroclor 1254, will have a lower tendency to leach and therefore are more likely to remain adsorbed to soil. These

facts are supported by both the high octanol to water coefficient (average K_{ow} is 1×10^6) and low water solubility (0.012 mg/L) as well as the results of the soil/gas vapor testing at the site.

A recent publication “*Dioxin and Dioxin-Like Compounds in the Food Study: Strategies to Reduce Exposure*,” published by National Academies Press, 2003, presented a discussion of the environmental mobility of dioxin-like compounds (DLCs), including dioxin-like PCBs. The following are excerpts from this publication:

“Once below the soil surface, soil-bound DLCs do not appear to move up or down via volatilization without a carrier; this is particularly true for the tetra- and higher chlorinated DLCs. The presence of a solvent such as oil may facilitate the diffusive movement of DLCs through soil.”

“In soils, DLCs bind strongly to organic matter with the result that degradation below the soil surface is virtually nonexistent.”

Field conditions which would contribute to or facilitate transport of PCBs are not present at McCoy Field. These conditions would include factors such as the presence of other contaminants in which PCBs are soluble (e.g. oils and organic solvents); presence of colloidal particles; or where there is direct evaporation of water in contact with PCB-contaminated materials. The latter is the case with New Bedford Harbor where there are high concentrations of PCBs in the sediments. As the water evaporates it can facilitate partitioning of PCBs into the water column. In general, the partitioning tendency will be greatest with the least chlorinated congeners (mono to tri- chlorinated congeners). Arochlor 1254 has, on average, less than 1% of these congeners.

Given the chemical and physical properties of PCBs, the measures that will be employed at the McCoy Field site, including clean surface caps and activity and use limitations, should reduce to insignificant levels and/or eliminate the potential for release of PCB contamination from the Site. This will be confirmed by the monitoring of groundwater and indoor air.

COMMENT 24

The vapor issue, venting issue and “volubility” issue should be settled before reuse of the site as a school.

EPA Response:

EPA believes these issues have been satisfactorily addressed. As previously discussed, EPA’s Approval will be amended to require additional measures should it be determined that an unreasonable risk develops in the future as shown by the environmental and indoor air monitoring.

COMMENT 25

The plan indicates that maintenance personnel need awareness training and information on use limitations created by the PCB contamination. Awareness training does not train maintenance workers to be LSPs and only LSPs should be in control of risk management and oversight.

EPA Response:

As part of the long-term monitoring and maintenance plan, EPA is requiring that a worker training plan be developed. The intent of this training is not to train workers on how to deal with or handle contaminated material nor to become LSPs. Any work occurring beneath any cap and into contaminated materials must be done by a trained professional and not by school personnel. This will also be required under the AUL. The training for everyday on-site workers, (e.g. maintenance staff, landscapers) will serve to acquaint workers with where the contamination is, what activities are allowed and not allowed, what to be aware of in performing their activities, etc., with the intent that the PCBs left on-site are not accidentally disturbed. The City will be required to certify that all workers have taken the training. EPA will require that new workers take the training and that “refreshers” are provided on an annual basis.

COMMENT 26

The McCoy Field draft approval cannot be complete without an effective, detailed monitoring and maintenance plan from the City of New Bedford.

EPA Response:

EPA agrees. The Approval requires that the City of New Bedford submit a detailed monitoring and maintenance plan for the Site, including the surface caps, indoor air, vent gases, groundwater, and wetland sediments. In addition, the Approval requires that the City submit a communication plan and a worker training plan for EPA review and approval.